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ABSTRACT

This paper discusses the development of children's communicative abilities in relation to three models: the psycholinguistic model, which posits that grammatical competence is achieved through children's innate ability to abstract linguistic rules and apply them in creating sentences; the Bernstein hypothesis, which holds that not everyone acquires and maintains the same coding ability--social and other relationships influence communication; and the communication-based model, which considers the total environment of children to be input during language development. The paper concludes that, in exploring the functional development of children's communicative abilities, the communication-based model should be used to examine the stages through which children move to communicate both material needs and affective needs. (JM)

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TOWARD A COMMUNICATION-BASED MODEL
OF LANGUAGE DEVELOPMENT

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Traditionally, linguistic theory has had very little to do with the down-to-earth problems of sending messages. In fact, before entering speech communication, and more specifically psycholinguistics, I conceived of communication as rule-ordered, well structured sentences, expressing clear and complete ideas for the listener or reader. It is no wonder that I grew frantic when faced with my first corpus of child language data. A simple utterance such as "Daddy" could mean "that is daddy's hat," "that is daddy," "pick this up for me Daddy," and on and on. In the case of an older child, say 2½ or 3, the strings host more linguistic elements and as a result are rich with data. A researcher might collect a set of such utterances and count the number of morphemes, examine the sentences for syntactic complexity, analyze the developing sound system, or even guess at what the child had in his or her mind when producing the string of words. But it is only until recently that we have begun concerning ourselves with how the child creates meaning for us, the channels that are employed, the relationships formed, the function served, and finally, the meaning communicated.

It goes without saying that children do communicate--and quite well--at the babbling and holophrastic stages. Even though their utterances hold seemingly far less at the phonologic level, the propositions they communicate are as complex as those of the much older speaker. This is indeed a fact that is easily alluded to but passed over by those whose main study is words and sentences. In the communication area we cannot sweep this fact under the carpet. For us, a basic sender-receiver model explains the situation best in that meanings cannot be sent, only messages. And these messages flow through a variety of channels, verbal, gestural, and contextual. In other words, relationships are fashioned (employing both the verbal and nonverbal) for the receiver which result in the communication of meaning. (At the adult level

the process remains the same although the strings are at times much longer.)

As Schlesinger (1971: 64) points out:

A speaker does not produce just any utterance but an utterance which he finds appropriate in view of the situation at hand, his state of mind, etc. In short, the speaker has certain intentions which he realizes in his speech.

It would seem, then, that children learn rules for communicating in context rather than rules for producing full and complete sentences.

Basil Bernstein's hypothesis becomes very meaningful when we accept the idea that sentences may vary from the truncated version, relying on gesture and context, to the more complete and formal such as might be found in our panel today. Not everyone, Bernstein maintains, develops the same ability to code (encode) messages. In fact, some individuals are very "restricted" in that they will only communicate accurately to a particular group with whom they share a great deal of life experience. Other individuals, however, learn a more universal, or "elaborated," code--the more complete sentence if you wish--permitting them communication with a wider variety of individuals. Bernstein does not stop here but goes on to say that code is also a good indicator of how individuals function in the interpersonal realm, the users of the restricted code interacting in society quite differently from those of the elaborated code.

Developing the ability to send clear messages as well as to effectively relate with others provides the focus for much of our work with children. Yet, the information provided concerning the ontogenesis of language would only seem to treat competence and minimal performance aspects of language, neglecting some very necessary and important components involved in sending messages. Areas of linguistic concern have produced a wide variety of models. On the one hand, we find elegant and very parsimonious models

describing the development and structure of human sentences. And on the other, the Bernstein or more sociolinguistic direction, researchers concerning themselves less with the structure of language and more with language codes and interpersonal orientations. Yet, there remains a pragmatic need for both orientations to find a middle ground where we could move toward a more communication-based model of language development.

The Psycholinguistic Model

Psycholinguists of the more innatist bent have come to accept a model which posits that a fictive language acquisition device receives a corpus of utterances and, through the sorting out of grammatical and non-grammatical sentences, abstracts a rule schema which represents the regularities of the language.

Linguistic Corpus → LAD → Grammatical Competence

The LAD hosts innate information which may be applied to the general form of language not excluding the acquisition of any natural language. The internal structure of the LAD presumably serves as the hypothetical instrument by which words, meanings, and syntactic relationships are abstracted from linguistic input and employed in communication. As McNeill (1970: 1088) comments, there is a remarkable regularity in the onset of language, even to the extent that many features appear universally in all children.

This regularity, according to the nativists, may be attributed to the child's innate linguistic ability to abstract the basic syntactic categories which every language employs in its sentences. Such categories are subject, predicate, and object. These are implicit in the base structure string with the following classes being determined by syntactic relationships. The subject becomes the noun phrase of the sentence, the predicate becomes the verb phrase

of the sentence and the object becomes the noun phrase of the verb phrase. The classes of noun and verb then become defined by their sentential function. To communicate, the child must carry out a sophisticated process which is largely dependent upon ability to organize linguistic input. Menyuk (1969: 23) states:

To understand and generate sentences the child must observe the functional relationships in sentences, then define types of classifications, and then observe selectional constraints on the combination of these sentences.

The LAD's primary concern is with the interaction which takes place between the innate linguistic capacities of the child and the child's linguistic input.

Until recently, most of the research which has taken place at this level has not provided a grammar that accounts for anything but syntactic categorization of words or word units, mentioning nothing of the developmental nature of the child's grammatical system. Some grammars such as the early distributional analyses of Braine (1963) and Miller and Ervin (1964) have implied that the child's communication system is separate from the adult's. Others such as Bloom (1968) and Menyuk (1969) credit the child's linguistic system with language capacities of the adult although they are not yet part of the child's utterance.

In Bloom's model the young speaker, like the adult receiver, relies upon a generative rule structure to produce sentences from deep structures and transform the input, or sentences, back to deep structures. According to this theory, a grammar serves as a construct originating at the symbol S, or sentence, and with the aid of finite phrase structure rules and transformation rules produces an infinite number of unique and rule governed sentences.

Bloom's analysis and those like hers represent an improvement over the earlier distributional analysis in that they employ generative rules which

depict the way surface structure is derived from deep structure and reveal relationships between classes of words. Because of its complexity, however, this approach has undergone much criticism (Kernan, 1969, 1970; Schlesinger, 1971; Bowerman, 1971). Specifically, the mystical nature of the LAD leaves little to the learning abilities of the child (Kernan, 1970).

With the advent of Fillmore's writings on case grammar, psycholinguists have begun examining children's utterances with more than mere surface classification or elaborate transformational structures in mind. There now exists the growing realization that the semantic or conceptual intentions of the speaker are realized through the syntactic-semantic relationships within the phrase or sentence. That is, the nouns and verbs of a sentence stand not only in a syntactic relationship with each other but a semantic one as well. Classes such as subject of the predicate really have very little meaning as a result since they are merely syntactic and reflect no real logical relationship. On the other hand, case notions, and here I'm speaking of agentive, dative, instrumental, locative, exist both at the semantic and syntactic level. The sender, according to Fillmore, logically orders these notions into a specific surface syntactic relationship with the verb so that events and processes can be communicated. Since this grammar generates surface structures which host semantic relationships, the deep structure of the transformationalist becomes "an artificial intermediate level" between what Fillmore (1968: 88) terms:

the empirically discoverable "semantic deep structure" and the observationally accessible surface structure, a level the properties of which have more to do with the methodological commitments of grammarians than with the nature of human language.

Even though human language may be formally characterized by the case model, it would seem to fall short when one considers that a number of our utterances, especially those of children, simply do not host a noun or verb concurrently

in some relationship. In fact, very few of us even speak in full sentences, unless making a presentation like this--and then that is not at times too likely. The acquisition of communication behaviors thus represents more than the acquiring of a number of rules of deletion and reduction; it would seem rather to consist of understanding--learning--a set of relationships between the speaker, the speaking environment, or context, word or words, and physical gestures. After all, the child does communicate rather complex states of affairs, sometimes using only one word--if even that.

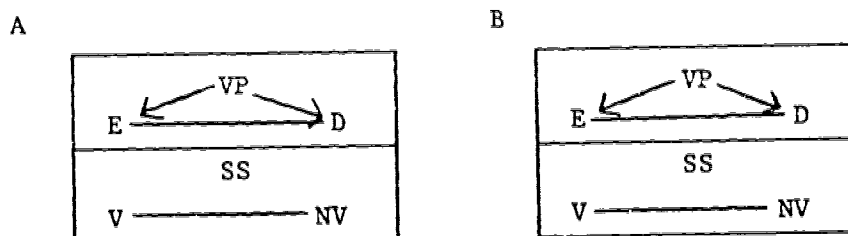
The Bernstein Hypothesis

Whereas the generative linguist holds that all human beings develop the same internal rule structure, or competence, sociolinguists of the Bernstein persuasion have stressed that not all of us exhibit the same performance in these speech acts. From the playpen to the first complete sentence, speakers develop very individual communication techniques. Bernstein's entire hypothesis, it seems to me, rests on this critical point; not everyone acquires and maintains the same, what Roger Brown terms, "coding ability." In fact, some speakers, according to Bernstein, experience input from a limited group which results in the use of a restricted code. Such individuals communicate well with only a particular or limited group. At the same time, others who have learned to communicate in a different environment, maintain a more "elaborated" or universal code permitting them clarity in expressing ideas to a wider variety of individuals.

Bernstein also develops a relationship between coding ability and social roles. Those tending toward a more restricted code--context bound and higher syntactic prediction--constitute the English "working class," while those using more elaborated codes constitute the "middle class." The more open roles of the middle class allow for a wider range of encoding

alternatives, encouraging verbal activity, while the more closed prescriptive roles of the working class indicate--perhaps encourage--a more authoritarian, direction-giving style of interaction. Whereas "positional" appeals based on authority direct behaviors in the working class, "personal" appeals to logic and reason are employed in controlling the open role family.

Bernstein (1971a: 80) further defines the term code by positing the following model:



The section in the lower portion of box A and B (signal store) represents the storage of verbal and nonverbal information. In the upper portion of boxes A and B the symbols E and D represent the encoding and decoding processes, these being controlled and integrated by VP, or the verbal planning function. Although Bernstein (1971b: 131) probably does not intend the model to be applied to the acquisition process, it certainly provides an excellent look at the developmental process.

Orientation: The listener B first scans the communication for a pattern of dominant signals. Not all the words and extraverbal signals will carry the same value; some will carry greater significance than others for the listener. This is the beginning of the verbal planning sequence.

Selection: There will be associations to the patterns of dominant signals which will control the selections the listener makes from his potential stock of words, sequences, and extraverbal signals. [V + NV]

Organization: The listener will then have to fit the selected words and sequences into a grammatical frame and integrate them with the extraverbal signals. [This results in the receiver's reply.]

The signals received by the person who will eventually develop a restricted code are very different from the person acquiring an elaborate code. In the case of children experiencing an elaborated code, Bernstein (1971b: 133) states that "As a child learns an elaborated code he learns to scan a particular syntax, to receive and transmit a particular pattern of meaning, to develop a particular planning process, and very early learns to orient toward the verbal channel." But, children limited to a restricted code, that is, one which is more context bound, will not learn vocabulary, exhibit a variety of sentence patterns or be motivated to employ language as "a set of theoretical possibilities for the presentation of his discrete experience to others."

On another level--interactional--as the child learns to communicate or, in the terms used here, learns specific codes which regulate verbal and non-verbal acts, he or she learns the requirements of his or her particular social structure. As Bernstein (1973b: 124) maintains:

The experience of the child is transformed by the learning which is generated by his own apparently voluntary act of speech. The social structure becomes the substratum of his experience essentially through the consequences of the linguistic process. From this point of view, every time the child speaks or listens the social structure of which he is a part is reinforced in him and his social identity is constrained. The social structure becomes the developing child's psychological reality by the shaping of his acts of speech. Underlying the general pattern of his speech are, it is held, critical sets of choices, preferences for some alternatives rather than others, which develop and are stabilized through time and which eventually come to play an important role in the regulation of intellectual, social and affective orientations.

The Bernstein model would then posit reciprocal influence between the code one develops and uses and the social relationships, or, more generally, the quality of social structure in which one engages.

Although I do not completely buy the Bernstein model, I value it for several interesting comments regarding (1) the language the child hears and uses, (2) the interaction between social role and communication, and (3) the

communication characteristics of the nonverbal environment. It might be good to ask ourselves just what kind of sentences children hear. Are they all well-formed subject-predicate strings? Hardly, although research indicates that adults generally take much more care in communicating with young children than with each other (Broen, 1972). In fact, we employ a separate code of context, gestures, pauses, and few words when talking to the language learner. At 2½ my daughter, Rachel, when talking to her 10-week old baby sister, varies her coding from that used in communicating with adults.

It is also interesting that parents pay relatively little attention to correcting errors in language usage but spend most of their effort keeping track of the idea--usually trying to sort out the meaning (Cazden, 1972). As adult communicators, and parents in many cases, we concern ourselves with the idea and not the form. The natural outcome, it seems to me, is that of encouraging ideas to grow in a climate stressing sharing through increased verbal expression. As we have heard, Bernstein concerns himself with this more affective variable. In essence he says that children must be communicated with in such a way that they will feel they are important and have something meaningful to say. Only in this way will children view themselves as unique, responding actively rather than passively.

That parental attitudes toward a child influence language development is hardly a new idea. But that classes communicate differently and, as a result, create their own limits opens a new area of study. Research would seem to support the idea that classes communicate differently, at least that the "middle class" interacts more with children during early years than does the lower class (Tulkin, 1970). Other studies such as that of Hess and Shipman (1968) suggest that children can be either given directions or imperatives, with the first group relying on language and the other more on

physical setting and manipulation of the environment. Adult language usage along with the other interpersonal behaviors involved in dealing with the world may be directly related to the verbal and nonverbal communication experienced early in life. It is this early communication that acquisition models must begin to consider in order to reflect the eventual messages sent. We must begin concerning ourselves with sociolinguistic theory, asking what functional components in the child's communication correspond to the eventual adult communication system. Just what social functions does the adult system serve and how do the child's developing abilities relate to these?

A Communication-Based Model

If the LAD model is to be employed, it must consider the total environment as input rather than the array of non-sentence forms, stops and starts, and other imperfections of production that the child encounters as linguistic input. The model might be more appropriately conceived as:



Our concept of output must also be reexamined. To date, no grammar accounts for the developmental nature of the child's grammar. Some distributional grammars seem to state that the child's communication system is separate from the adult's. And other grammars hint at greater complexity than one might evidence from the truncated sentence strings.

As I pointed out earlier in my talk, relationships between things and processes must be made or structured in order for meaning to be transferred from one person to another. But, as much of the research indicates, there are seldom enough words in a string to establish relationships in the child's propositions. There are, however, extralinguistic elements which the child employs in communicative strategies so as to construct meaning. At holophrasis,

words such as "open," "down," "go," "cup," and "daddy," although relatively simple, can communicate somewhat complex meanings. The child may repeat one of these words while motioning with the arms or grabbing an object. What he or she is expressing is a set of relationships involving the things and actions of his or her environment much as the adult speaker who orders words syntactically. Both are propositions which predicate relationships and name "things" in the environment. Whether the relationships take place simultaneously (gesture-word-context) or linearly as in the sentence, we must agree that they exist.

Consider, for instance, the person "Jim" and a 16-month old child's request of him to open the door. How exactly will the child express the notion? Will the name "Jim" be employed along with a pointing gesture toward the door; perhaps it will be "door" and a nod to Jim; or maybe the child will just use the word "door." Because several different messages may be demonstrated consistently through the manipulation of these linguistic and extralinguistic features, the child would seem to entertain a rule structure at this early age. Semantically the above utterance constitutes Jim + open + door. And as suggested, the child may realize the utterance by acting differently toward the agent, the action, and the object, facilitating meaning through a strategy of some sort.

It has been my contention for some time that a grammar could be developed which would account for the child's meanings through some ordering of finite elements, verbal and nonverbal. I carried out a study to investigate this very notion, examining the words used in holophrasis and the pattern by which they were related to the environment. Videotaping two children for one year as they moved through holophrasis, I found them developing the same general verbal-gestural schema--though different lexicons--throughout the one-word

period (Reed, 1972). (I have recorded similar data on the Palau Islands from holophrastic speakers.) In short, the gestures provide a basic logical framework in which the child may experiment with a type of word, testing its communicativeness as it performs various new functions (action, object, agent, label, receiver, location). Thus, the child not only entertains words and their meanings at holophrasis, he or she also entertains the ability to correlate them with context, developing relationships which will later hold sentential meaning between words at the two-, three-, and multi-word levels.

Along with the relationships between gestures and words, there is another most important component in a communication-based model. That is the function of language, the way in which people use language to satisfy desires, enlist the aid of others, establish interpersonal relationships, and communicate ideas. In speaking of modes of social control, Bernstein shows clearly that language not only helps develop the child's various roles but reinforces a variety of communicative behaviors in the child. Bernstein (1971b: 158) presents the difference between the positional, imperative, and interpersonal appeal with the following example:

Imagine a situation where a child has to visit his grandfather who is unwell and the child does not like to kiss him because the grandfather has not shaved for some time. One mother says to the child before they go:

Mother: Children kiss their Grandpa (positional)
Child: I don't want to--why must I kiss him always?
Mother: He's not well (positional reason)--I don't want
none of your nonsense (imperative)

Another mother says in the same context: "I know you don't like kissing Grandpa, but he is unwell, and he is very fond of you, and it makes him very happy."

Communication in situations such as this, we must agree, provides the main input for the young child. And, as a result, the child learns that language can serve a variety of functions beyond the syntactic and lexical possibilities and

restrictions imposed by age or environment. Halliday (1973:353) states the importance of learning these functions saying, "The social functions which language is serving in the life of the child determine both the options which he creates for himself and their realizations in structure."

Regardless of whether the child produces single or multi-word utterances, speech has already begun to serve a number of similar specific functions. The "I want" function, for instance, is shared with any number of adult speakers. Working with the functional aspect of language development, Professor Halliday has pointed out that children learn a number of functions quite early. One of the first to appear, the "instrumental" function, is familiar to probably all of us. In short, it is the child's expression "I want." This request does not demand that a specific person fill the need but simply that a wish be carried out (Halliday, 1973). The child soon learns to control the behavior of others, what Halliday terms the "regulatory" or "do as I tell you" function.

The child also learns to convey information. As this function becomes refined, the child depends less on context and environment to help send the message. This "informative" function continues to expand in importance until it dominates much of our communication. Arriving some point later at an "ideational" level of communication, the child participates in the ultimate human communication activity, building--through language--abstract ideas or constructs out of context.

One of the most interesting functions discussed by Halliday is the "interpersonal." Children learn quite early to use language--verbal and non-verbal--in expressing feelings about a person, group, or situation. Similarly, they develop communication behaviors for initiating and terminating interactions, controlling behavior of others, and expressing personality. Of course, our

communication could conceivably remain at the instrumental level--and this might solve a number of communication breakdowns--but we do acquire other communication strategies or functions. And, interestingly enough, we learn how to form an utterance so that it can carry out several of the above functions at once (Williams, 1972).

There would then seem to be levels of ability in such communication contingent upon exposure to appropriate models or situations. Most of us have spent a great deal of time learning and helping others to learn the intricacies of communication, how to delicately interweave the interpersonal in with the ideational and make the proper utterance fit the context and the presuppositions and knowledge of the listener. Unfortunately, many children are and will remain restricted from exposure to the variety of input that would make such education unnecessary.

The application--or wedding in this case--of linguistic and behavior related theory results in a very realistic model of communication. Recent developmental models of language, in examining the nonverbal together with the verbal, have begun depicting the more observable and real complexities of sending messages. As I have attempted to point out, the child moves through stages in which he or she learns not only to communicate material needs, but the more affective needs met through interaction. It would not seem that we could speak of developmental communication unless addressing both issues. Only by working toward a more communication-based model can we begin speaking about the functional development of children's communicative abilities.

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